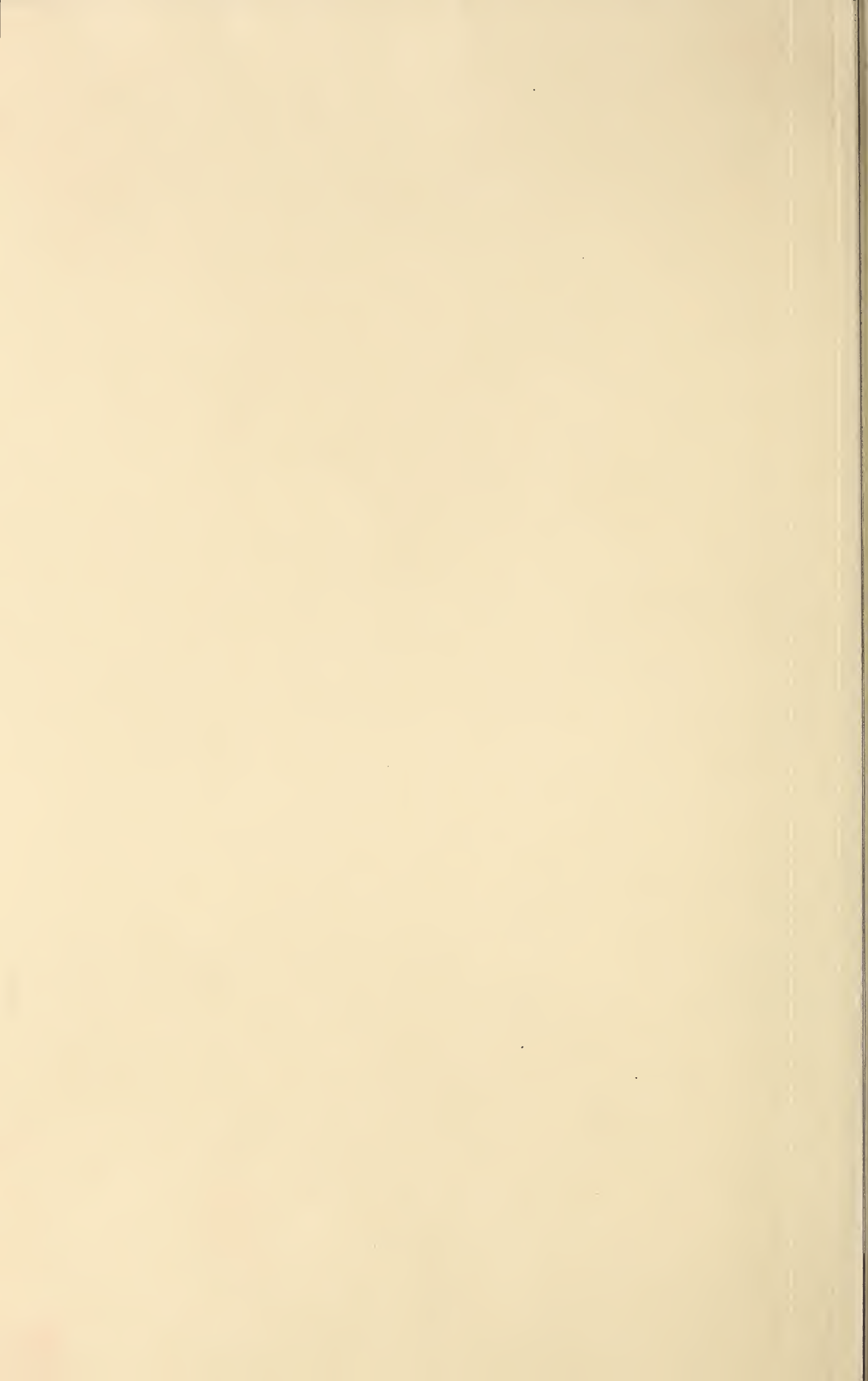
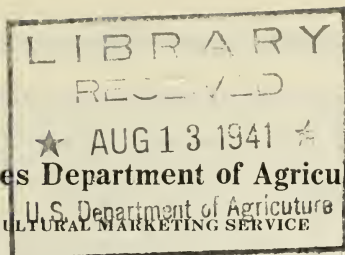


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Issued April 1933
Revised April 1941

United States Department of Agriculture

U. S. AGRICULTURAL MARKETING SERVICE

SERVICE AND REGULATORY ANNOUNCEMENTS NO. 141¹

UNITED STATES STANDARDS FOR GRADES OF CANNED TOMATOES

(Effective April 1, 1941)

DEPARTMENT OF AGRICULTURE,
Washington, D. C.

By virtue of the authority vested in the Secretary of Agriculture by the provision in the act of Congress entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1941, and for other purposes" (Public, No. 658, 76th Cong.), approved June 25, 1940, authorizing an inspection service for farm products, I, Grover B. Hill, Acting Secretary of Agriculture, do prescribe and promulgate the following standards for grades of canned tomatoes, to be in force and effect on and after April 1, 1941, and as long as Congress shall provide the necessary authority therefor, unless amended or superseded by standards hereafter prescribed and promulgated under such authority. These standards shall supersede all standards for canned tomatoes previously promulgated under such authority.

Done at Washington, D. C., this 17th day of August 1940.
Witness my hand and the seal of the Department of Agriculture.



Grover B. Hill
Acting Secretary of Agriculture.

The standards of identity, fill of container, and quality for canned tomatoes, promulgated by the Secretary of Agriculture under section 401 of the Federal Food, Drug, and Cosmetic Act of June 25, 1938 (21 U. S. C. § 341), by orders issued July 14, 1939 (Federal Register Documents 39-2572, 39-2573, 39-2575, 39-2576, 39-2578), and any revisions or amendments thereof, or other standards hereafter promulgated pursuant to the authority contained in section 401 of the Federal Food, Drug, and Cosmetic Act of June 25, 1938 (21 U. S. C. § 341), are hereby adopted for the purpose of these grades.

GRADES OF CANNED TOMATOES

U. S. Grade A² or U. S. Fancy canned tomatoes are tomatoes which have a drained weight of not less than 66 percent of the capacity of the can of which 80 percent are whole or almost whole; are of good red color; are practically free from defects; and possess a normal tomato flavor. None of the factors may score below any subdivision lettered (A) as hereinafter set forth.

¹ This announcement was originally issued as Service and Regulatory Announcements 141 of the Bureau of Agricultural Economics.

² Tomatoes meeting the requirements of this grade, if 95 percent of the drained tomatoes are whole or almost whole, will be certified as U. S. Grade A (Whole). Ten percent tolerance in drained weight is permitted in U. S. Grade A (Whole) tomatoes.

U. S. Grade B or U. S. Extra Standard canned tomatoes are tomatoes which have a drained weight of not less than 58 percent of the capacity of the can; consist in whole or in part of large pieces, with or without whole or almost whole tomatoes; are red in color; are reasonably free from defects; and possess a normal tomato flavor. None of the factors may score below any subdivision lettered (B) as hereinafter set forth.

U. S. Grade C or U. S. Standard canned tomatoes are tomatoes which have a drained weight of not less than 50 percent of the capacity of the can; consist of small or large pieces, with or without whole or almost whole tomatoes; are fairly red in color; are fairly free from defects; and possess a normal tomato flavor. None of the factors may score below any subdivision lettered (C) as hereinafter set forth.

Substandard canned tomatoes are tomatoes which fail to meet the requirements of the fill of container and quality standards promulgated under the Federal Food, Drug, and Cosmetic Act of June 25, 1938.

DEFINITION OF TERMS

As used in these grades:

"Normal tomato flavor" means that the product is free from objectionable or off flavors of all kinds.

"Capacity of can" means the weight of distilled water which the sealed container will hold at 68 degrees Fahrenheit.

ASCERTAINING THE SCORE FOR EACH FACTOR

These grades are so drawn that the value for each factor may be expressed numerically. The maximum score that may be given for each factor is:

	<i>Points</i>
I. Drained weight.....	25
II. Wholeness.....	25
III. Color.....	25
IV. Absence of defects.....	25
Total score.....	100

Drained Weight.—The rating for drained weight shall be based on the percentage of tomato meat remaining on the screen after draining the sample for 2 minutes over a screen containing two meshes to the inch, the screen remaining in a slightly inclined position to facilitate the draining of the tomatoes. The wire of the screen is of uniform diameter of 0.054 inch, woven into square meshes of uniform inside diameter of 0.446 inch. Canned tomatoes packed in containers the contents of which are less than 3 pounds shall be drained over a screen of the above description, 8 inches in diameter; if the contents are 3 pounds or more, the tomatoes shall be drained over a screen of the above description, 12 inches in diameter.

- A) A score of 23 points will be given if 66 to 68 percent of the tomatoes remain on the screen after draining as described above; 24 points if 68 to 70 percent remain; and 25 points if 70 percent or over remain.
- B) A score of 19 points will be given if 58 to 60 percent of the tomatoes remain on the screen after draining as described above; 20 points if 60 to 62 percent remain; 21 points if 62 to 64 percent remain; and 22 points if 64 to 66 percent remain.
- C) A score of 15 points will be given if 50 to 52 percent of the tomatoes remain on the screen after draining as described above; 16 points if 52 to 54 percent of the tomatoes remain; 17 points if 54 to 56 percent remain; and 18 points if 56 to 58 percent remain.
- (D) A score of 0 to 14 points will be given if the tomatoes fail to meet the requirements of paragraph (C) above.

The following chart indicates the maximum headspace and drained weights for commonly used cans:

Points	Drained tomato meat	Picnic, 2 $\frac{1}{16}$ by 4 inches 8.8 $\frac{1}{2}$	No. 303, 3 $\frac{3}{16}$ by 4 $\frac{1}{16}$ inches 9.4 $\frac{1}{2}$	No. 2, 3 $\frac{3}{16}$ by 4 $\frac{1}{16}$ inches 9.7 $\frac{1}{2}$	No. 2 $\frac{1}{2}$, 4 $\frac{1}{16}$ by 4 $\frac{1}{16}$ inches 9.9 $\frac{1}{2}$	No. 10, 6 $\frac{3}{16}$ by 7 inches 13.6 $\frac{1}{2}$
	Percent	Ounces	Ounces	Ounces	Ounces	Ounces
25.....	Over 70	7 $\frac{3}{4}$	11 $\frac{3}{4}$	14 $\frac{3}{8}$	20 $\frac{7}{8}$	76 $\frac{1}{2}$
24.....	68 to 70	7 $\frac{1}{2}$	11 $\frac{1}{2}$	14	20 $\frac{1}{4}$	74 $\frac{1}{2}$
23.....	66 to 68	7 $\frac{1}{4}$	11 $\frac{1}{8}$	13 $\frac{1}{2}$	19 $\frac{3}{4}$	72 $\frac{1}{2}$
22.....	64 to 66	7	10 $\frac{3}{4}$	13 $\frac{1}{8}$	19	70
21.....	62 to 64	6 $\frac{3}{4}$	10 $\frac{1}{2}$	12 $\frac{3}{4}$	18 $\frac{1}{2}$	67 $\frac{1}{2}$
20.....	60 to 62	6 $\frac{1}{2}$	10 $\frac{1}{8}$	12 $\frac{1}{4}$	17 $\frac{7}{8}$	65 $\frac{1}{2}$
19.....	58 to 60	6 $\frac{1}{8}$	9 $\frac{3}{4}$	12	17 $\frac{1}{4}$	63 $\frac{1}{2}$
18.....	56 to 58	6 $\frac{1}{8}$	9 $\frac{1}{2}$	11 $\frac{1}{2}$	16 $\frac{3}{8}$	61 $\frac{1}{4}$
17.....	54 to 56	6	9 $\frac{1}{8}$	11 $\frac{1}{8}$	16 $\frac{1}{8}$	59
16.....	52 to 54	5 $\frac{3}{4}$	8 $\frac{3}{4}$	10 $\frac{3}{4}$	15 $\frac{1}{2}$	56 $\frac{1}{2}$
15.....	50 to 52	5 $\frac{1}{2}$	8 $\frac{1}{2}$	10 $\frac{1}{4}$	14 $\frac{7}{8}$	54 $\frac{1}{4}$

1 Maximum headspace allowable measured from top of double seam in sixteenths of an inch.

II. Wholeness.

- (A) If at least 80 percent of the tomatoes are whole or almost whole, a score within the range of 22 to 25 points will be given.

Tomatoes are considered "whole" if each unit consists of a peeled, cored tomato in which the coring has been done in such a manner that the rounded contour of the stem end is not destroyed and no seed cavity has been opened by trimming, and the general contour of the tomatoes has been preserved.

Tomatoes are considered "almost whole" if they may be restored to their original shape as "whole" tomatoes, although they may be cracked or split somewhat.

- (B) If the tomatoes consist in whole or in part of large pieces with or without whole or almost whole tomatoes, a score of 19 to 21 points will be given.

A "large piece" is a piece weighing 2 ounces or more. Tomatoes merit a score of 19 points when 70 percent by weight of the material remaining on the screen, when drained as described under the factor of drained weight, consists of large pieces with or without whole or almost whole tomatoes. Scores of 20 and 21 points will be given as the percentage of tomatoes or large pieces approaches the minimum requirement of paragraph (A) above.

- (C) If the tomatoes consist of small or large pieces, with or without whole or almost whole tomatoes, a score of 15 to 18 points will be given.

"Small pieces" means pieces which have not passed through the screen during draining, as described under the factor of drained weight. Tomatoes will be given a score of 15 points when the weight of the tomatoes remaining on the screen after draining is equivalent to 50 percent of the capacity of the can. Scores of 16 to 18 points will be given as the percentage of fairly large pieces approaches the minimum requirements of paragraph (B) above.

- (D) If the tomatoes fail to meet the requirements of paragraph (C) above, a score of 0 to 14 points will be given.

III. Color.

- (A) If the canned tomatoes have a uniformly good red color typical of the variety, a score of 22 to 25 points may be given.

"Good red color" means that the color of at least 90 percent of the surface areas of the tomatoes is as red as "Tomato Red"—Plate 3, 1-12, and not more than 10 percent of the surface areas may show as much yellow as Plate 4, F-12, as illustrated in Maerz and Paul's "Dictionary of Color."

- (B) If a good red color predominates but a few slightly undercolored surface areas are present, a score of 18 to 21 points may be given.

"Few slightly undercolored surface areas" means that not more than 50 percent of the surface areas may show less red than "Tomato Red," but not less red than that in the color produced by the blending of the Munsell color disks, as described in paragraph (C).

- (C) If red is the predominating color but noticeably undercolored surface areas are present, a score of 15 to 17 points may be given. The minimum score of 15 points will be given when the color barely meets the following test:

After draining the tomatoes as prescribed under the factor "Drained weight," cut out and segregate successively those portions of tomatoes of least redness until 50 percent of the drained weight has been segregated. Commminute the segregated portions to a uniform mixture without removing or breaking the seeds. Fill the commminuted tomatoes into a black container to a depth of at least 1 inch. Free the surface from air bubbles and remove or press below the surface all visible seeds. Compare the color of the mass in full diffused daylight or its equivalent with the blended color of combinations of the following concentric Munsell color disks of equal diameter or the color equivalents of such disks:

- (1) Red—Munsell 5R 2.6/13 (Glossy finish).
- (2) Yellow—Munsell 2.5 YR 5/12 (Glossy finish).
- (3) Black—Munsell N1 (Glossy finish).
- (4) Gray—Munsell N4 (Mat finish).

These disks are so placed that the area of disk (1) covers one-third or more of the circle, and the exposed area of disk (2) does not exceed that of disk (1). The exposed areas of disks (3) and (4) make up the remainder of the area of the circle without regard to the exact exposed area of each. The color equivalent to that produced by the spinning of the disks set in the above proportions approximates Plate 4, F-12 of Maerz and Paul's "Dictionary of Color."

- (D) If the tomatoes fail to meet the color requirements of paragraph (C) above, a score of 0 to 14 points may be given.

IV. Absence of Defects.—This factor deals with the degree of care exercised in the removal of extraneous material, skins of tomatoes, core material, and tomato blemishes, which would ordinarily be removed in the careful preparation of tomatoes for culinary use.

- (A) If the product is practically free from defects, a score of 23 to 25 points will be given.

"Practically free" means the total absence of extraneous material and of blemishes, and that per pound of contents, the total area of skins does not exceed one-eighth of a square inch, and core material does not exceed 2 grams.

- (B) If the product is reasonably free from defects, a score of 19 to 22 points will be given.

"Reasonably free" means the total absence of extraneous material and that per pound of contents the total area of skins does not exceed one-half square inch, core material does not exceed 6 grams, and blemishes do not cover an area of more than one-eighth square inch. A score of 19 points will be given when the requirement is barely met. Scores of 20, 21, and 22 points will be given when the product contains fewer defects, but more than permitted in paragraph (A) above.

- (C) If the product is fairly free from defects, a score of 15 to 18 points will be given.

"Fairly free" means the total absence of extraneous material and that per pound of contents the total area of skins does not exceed 1 square inch and blemishes do not cover an area of more than one-fourth square inch. Scores of 16, 17, and 18 points will be given when the product contains fewer defects than those mentioned but contains more than permitted in paragraph (B) above.

- (D) If the product possesses more defects than allowed under paragraph (C) above, a score of 0 to 14 points will be given.





